

range extensions of *Nepenthes khasiana*. In October 2002, a new site was found more than a kilometre northwest of the site near Umtra. This site is smaller than the earlier one and is on the left side of National Highway 44, while coming from Khliehriat. On December 14, 2002, I found many small sites scattered widely from Rymbai village (25°20' N, 92°20' E) (Fig. 1) towards Lakadong. I drove for another 2 km (25°19' N, 92°19' E) and found scattered plants. The plants reportedly occur farther down towards Lakadong, but may not be present at Lakadong. The elevation of these patches was 1100 m above msl.

I then drove east of Khliehriat. The first patch, a large one along a *mullah* was near Sutnga village (25°22' N, 92°26' E) at 950 m elevation. The plant is reported from all around the village, but I could not visit all the sites. Farther east, up to about 4 km east of Sutnga I found some more pitcher plants. This site (25°21' N, 92°27' E) at 900 m elevation is the new eastern range of *khasiana*. There was a report from a site at 92°28' E, which I could not visit.

Towards west, I received reports of occurrence at Chokpot (25°18' N, 90°25' E) (Surajit Roy, pers. comm.) and Deku area (25°20' N, 90°21' E) (Chagla Sangma, Awal Marak pers. comm.), both in South Garo Hills district. The known west-east extent of *Nepenthes khasiana*, which was 90°40' E to 92°25' E, has now extended to 90°21' E to 92°28' E with a number of new sites (Fig. 1).

In Jaintia Hills, coal mines using crude methods and its allied activities such as clearance of forest and levelling for storage of coal, setting up of labourers' camps, truck parking, shops and hotels have become a major threat. The labourers, truck drivers, shops and hotels also need wood for fuel and heating (in winter). It is high time that the coal mining, which is the main economy of the area is modernised so that its impact on the environment can be minimised. Some of the larger patches, such as the one along the *mullah* near Sutnga village, should be protected by erecting fence and banning coal mining and felling.

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March 19, 2003 ANWARUDDIN CHOUDHURY
The Rhino Foundation for nature in NE India,
C/o Assam Co., Ltd., Bamunimaidam,
Guwahati 781 021, Assam,
India.
Email: badrul@sancharnet.in

REFERENCES

CHOUDHURY, A.U. (2000): Range extension of *Nepenthes khasiana* in the Jaintia Hills, Meghalaya. *J. Bombay Nat. Hist. Soc.* 97(1): 166-167.

RODGERS, W.A. & S. GUPTA (1989): The Pitcher Plant (*Nepenthes khasiana* Hk. f.) Sanctuary of Jaintia Hills, Meghalaya: lessons for conservation. *J. Bombay Nat. Hist. Soc.* 86: 17-21.

26. *LINDERNIA ESTAMINODIOSA* (BLATT. & HALLB.) MUKHERJEE (SCROPHULARIACEAE): A NEW DISTRIBUTIONAL RECORD TO ANDHRA PRADESH

The genus *Lindernia* All., comprising about 100 species (Sivarajan and Mathew 1983), is described under various generic names, such as *Lindernia* All., *Vandellia* L., *Bonnaya* Link & Otto and *Ilysanthes* Rafin. The genus is represented by 22 species in India (Sivarajan and Mathew 1983; Cook 1996) and 11 species in Andhra Pradesh (Pullaiah and Ali Moulali 1997).

While studying the aquatic and wetland angiosperm diversity in Andhra Pradesh, we came across an interesting taxon of *Lindernia* All., with a sizable population, growing in moist locality, near Tada, Nellore district, Andhra Pradesh. After a critical examination of the material with the help of literature it was identified as *Lindernia estaminodiosa* (Blatt. & Hallb.) Mukherjee. A thorough perusal of regional floras and monographs revealed that this taxon is hitherto not reported from Andhra Pradesh. A detailed description, brief

account on phenology along with illustrations is given to facilitate easy field identification.

Lindernia estaminodiosa (Blatt. & Hallb.) Mukh. *In: J. Ind. Bot. Soc.* 24: 133. 1945.

Bonnaya estaminodiosa Blatt. & Hallb. *In: J. Bombay Nat. Hist. Soc.* 24: 416. 1918.

Annual, erect herb, 6-15 cm, tall; stem slender, sharply quadrangular, branched, glabrous. Leaves opposite, sessile, oblong-oblongate, 10-30 x 3-5 mm, 1-nerved, lateral nerves obscure, base decurrent, margin with distinctly saw-like teeth, apex obtuse. Flowers in lax terminal and lateral racemes; bract subulate, 4 x 0.2 mm, 3-nerved, margin distantly setaceous above the middle, apex acute; pedicel stout, 4 mm long. Sepals deeply 5-lobed almost to the base, 3-4 x 0.2 mm, lobes lanceolate, margin and apex setaceous above the middle, apex subacute. Petals slightly pinkish, 3 x 1.5 mm, tube linear, 2 mm

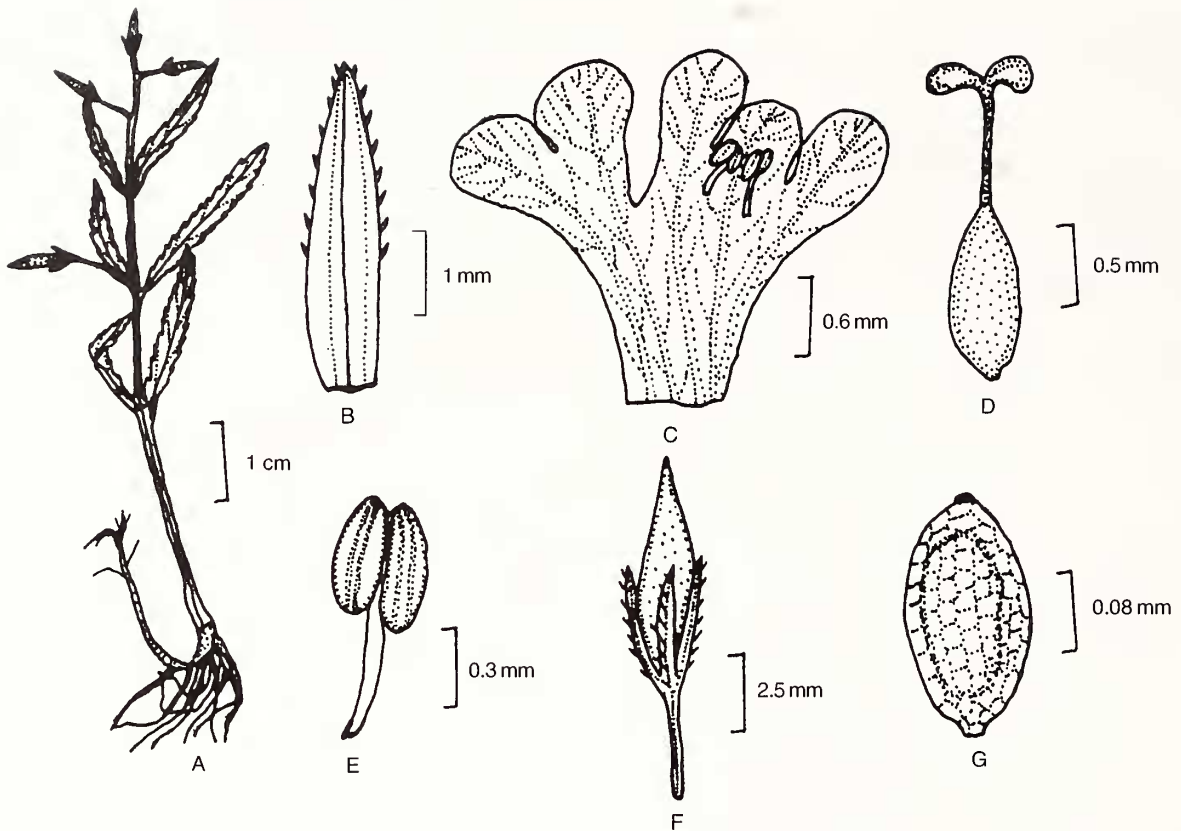


Fig. 1: *Lindernia estaminodiosa* (Blatt. & Hallb.) Mukherjee:
A. Habit; B. Bract; C. Petal; D. Pistil; E. Stamen; F. Sepals with capsule; G. Seed

long, glabrous; adaxial lip oblong-pyramidal, 2-lobed, equal; abaxial lip 3-lobed, lobes orbicular, 1 mm long; middle lobe slightly smaller than the lateral ones. Ovary elliptic, 1 x 0.5 mm; style 0.5 mm long; stigma 2-lobed, lobes orbicular, 0.5 mm long. Stamens 2; filaments 0.7 mm long; anthers unequal, 0.5 mm long, yellow; staminodes absent. Capsule cylindrical-elliptic, 10-12 x 1-1.5 mm, glabrous. Seeds oblong-orbicular, 0.25 mm long, reticulate, brown.

Ecology: Very rare in swamps.

Fl. & Fr.: October-January.

Distribution: Endemic to Southwest India. INDIA: Karnataka, Kerala, Maharashtra and Andhra Pradesh.

Exs.: Tada (Nellore district), MC 23550.

Note: It is closely allied to *Lindernia tenuifolia* (Colsm.)

Alston, but differs in having larger leaf blade (10-30 mm), terminal racemes, bracts as long as the pedicels and absence of staminodes.

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M. CHENNA KESAVULU

R.R. VENKATA RAJU

Department of Botany,

Sri Krishnadevaraya University,

Anantapur 515 003, Andhra Pradesh, India.

REFERENCES

- COOK, C.D.K. (1996): Aquatic and wetland plants of India. Oxford University Press, Oxford. 354 pp.
 PULLAIAH, T & D. ALI MOULALI (1997): Flora of Andhra Pradesh (India). Scientific Publishers, Jodhpur. 2: 663-667.
 SIVARAJAN, V.V. & PHILIP MATHEW (1983): The genus *Lindernia* All. (Schrophulariaceae) in India. *J. Bombay Nat. Hist. Soc.* 80(3): 131-140.